

CLAIM AMENDMENTS

1. (Currently amended) A method for automatic installation of a digital certificate on a cable modem in a data-over-cable system, the method comprising:

performing a digital certificate installation process on the cable modem to determine
determining whether a digital certificate is installed on the cable modem, the determination being
made by the cable modem; if not,

generating a digital certificate filename on the cable modem;

generating a digital certificate request including the digital certificate filename on the
cable modem, and sending a the digital certificate request including the digital certificate
filename from the cable modem to a predetermined network server;

receiving a digital certificate file on the cable modem including at least one digital
certificate, the digital certificate file having been sent from the network server; and

storing the at least one digital certificate received from the network server on the cable
modem;

wherein the digital certificate is required to authenticate the cable modem on a Cable
Modem Termination System (CMTS).

2. (Original) A computer readable medium having stored therein instructions for causing
a processor to execute the method of claim 1.

3. (Previously presented) The method of claim 1, wherein the network server comprises a
Trivial File Transfer Protocol server.

4. (Original) The method of claim 1, wherein the digital certificate comprises an X.509 security digital certificate.

5. (Previously presented) The method of claim 1, wherein the step of generating a digital certificate filename comprises using a type of the cable modem, a physical address of the cable modem and an authentication data string.

6. (Previously presented) The method of claim 5, wherein the authentication data string is generated on the cable modem by applying a hash function to at least one configuration setting associated with the cable modem.

7. (Original) The method of claim 6, wherein the at least one configuration setting comprises a MAC address, a serial number or a secret string.

8. (Previously presented) The method of claim 1, further comprising:
obtaining a globally routable network address on the cable modem prior to sending the digital certificate request to the network server; and
employing the globally routable network address for sending the digital certificate request to the network server.

9. (Previously presented) The method of claim 8, wherein the step of obtaining the globally routable network address on the cable modem comprises:

retrieving network address information from at least one data packet sent from at least one customer entity; and

obtaining a physical address of a network gateway associated with the at least one customer entity.

10. (Original) The method of claim 9, wherein the network address information comprises an Internet Protocol address and a Medium Access Control address associated with the customer entity.

11. (Previously presented) The method of claim 1, further comprising:

validating the at least one digital certificate received from the network server prior to storing the at least one digital certificate on the cable modem.

12. (Original) The method of claim 1, wherein the at least one digital certificate comprises a device digital certificate.

13. (Previously presented) The method of claim 12, wherein the at least one digital certificate further comprises a cable modem manufacturer digital certificate.

14. (Currently amended) A method for providing digital certificates to at least one cable modem ~~network device~~ in a data-over-cable system, the method comprising:

performing a digital certificate installation process on the cable modem to determine whether a digital certificate is installed on the cable modem, the determination being made by the cable modem; if not,

generating a digital certificate request on the cable modem;

receiving a the digital certificate request including a digital certificate filename on a network server from a the cable modem;

authenticating the request on the network server using at least one parameter specified in the digital certificate filename;

generating at least one digital certificate for the cable modem; and

providing the at least one digital certificate from the network server to the cable modem;

wherein the digital certificate is required to authenticate the cable modem on a Cable Modem Termination System (CMTS).

15. (Original) A computer readable medium having stored therein instructions causing a processor to execute the method of claim 14.

16. (Previously presented) The method of claim 14, wherein the filename comprises a type of the cable modem, a physical address of the cable modem, and authentication data string generated on the cable modem.

17. (Original) The method of claim 16, wherein the step of authenticating the request using the at least one parameter specified in the digital certificate filename comprises:

generating an authentication data string on the network server; and

comparing the authentication string generated on the network server with the authentication data string specified in the received digital certificate filename.

18. (Original) The method of claim 14, wherein the network server comprises a Trivial File Transfer Protocol server.

19. (Previously presented) The method of claim 14, wherein the at least one digital certificate for the cable modem is generated on the network server.

20. (Previously presented) The method of claim 14, further comprising:

requesting a digital certificate from a second network server upon receiving the digital certificate request from the cable modem; and

receiving the digital certificate on the network server from the second network server, wherein the second network server comprises a certificate authority server.

21. (Currently amended) A system for dynamic digital certificate installation in a data-over-cable network, the system comprises, in combination:

a cable modem configured to determine whether a digital certificate is installed on the cable modem, and if not, request a digital certificate from a predetermined network server; and

the network server configured to dynamically generate a digital certificate upon receiving a digital certificate request from the cable modem, and further configured to provide the digital certificate to the cable modem;

wherein the digital certificate is required to authenticate the cable modem on a Cable Modem Termination System (CMTS).

22. (Previously presented) The system of claim 21, wherein the network server comprises a Trivial File Transfer Protocol (“TFTP”) server.

23. (Previously presented) The system of claim 21, wherein the network server’s address is installed on the cable modem prior to requesting the digital certificate from the predetermined network server.

24. (Previously presented) The system of claim 21, wherein the cable modem is further arranged to install the digital certificate in a memory unit upon receiving the digital certificate from the network server.

25. (Original) The system of claim 21, wherein the digital certificate comprises an X.509 certificate.